U.S. Department of Transportation
Federal Highway Administration

Colorado Division

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Lakewood, Colorado 80228
720-963-3000

January 14, 2014

Edwin Okonkwo, P.E.
Contract Administration Engineer
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: Buy America Waiver Request from the Colorado Department of Transportation (CDOT) for French Technologie Alpine de Sécurité (TAS) Gazex® Avalanche Exploder

Dear Mr. Okonkwo:

The Colorado Department of Transportation is requesting a waiver from Buy America requirements to permit the acquisition of a French-manufactured Technologie Alpine de Sécurité Gazex® Avalanche Exploder. CDOT has submitted the attached waiver request and supporting information to the Colorado Division Office.

The requested TAS Gazex® is a remotely operable avalanche exploder that is positioned permanently in the avalanche starting zone and connected to a central shelter, housing gas cylinders. It utilizes ignited gas mixtures of propane and oxygen. This system will replace hazardous avalanche control.

We have reviewed their application and recommend a waiver for the TAS Gazex® for the following reasons:

- CDOT has demonstrated that there are no similar products being produced in the United States.
- Allowing the use of this equipment would be in the public interest due to the safety benefits compared to the hazards of handling explosives (via the howitzer and helicopter).

The Colorado Division is forwarding the CDOT waiver request to the Office of Program Administration for a formal in-depth review and final decision. If you have any questions, please contact Eva LaDow, Operations Engineer, at Eva.Ladow@dot.gov or 720-963-3011.

Sincerely,

John M. Cater, P.E.
Division Administrator

By: Randy Jensen
Program Delivery Team Leader

Attachment: CDOT Buy America Waiver Request

CDOT Buy America Waiver Request

For the Buy America Waiver Review Process, the following items must be included in the waiver request: 1) Federal-aid/ARRA Project Number; 2) Project Description; 3) Project Cost; 4) Waiver Item Cost; 5) Country of Origin of the Product; 6) Reason for the Waiver; 7) A Description of the Efforts made by the State to Locate a Domestically Manufactured Product; and 8) An Analysis of Re-design of the Project Using Alternate or Approved Equal Domestic Product.

1. Federal-aid Project/ARRA Project Number: CDOT is currently applying for federal-aid on this project. The project number is not yet available. It is anticipated that funding will be a combination of State and Federal funds.

2. Project Description: US 40 Berthoud Pass travels up Berthoud Pass to the ski resort of Winter Park and is also the primary route to Grand County from Denver. The route traverses mountainous terrain with several notorious, large avalanche slide paths. Historically, the slide zones have been controlled through the use of explosives launched by 105mm howitzers and dropping charges from helicopters. This project proposes to install TAS Gazex© avalanche control devices to eventually eliminate the current practice of handling explosives as well as begin to provide a more reliable and time-efficient avalanche mitigation system given the importance of the route and an 89 mile detour to Winter Park and a 45 mile detour to Grand County via SH 9 if the route is inaccessible.

The Gazex® device uses compressed air and propane that can be triggered remotely to set off a shockwave that acts directly on the snowpack surface to release the overburden and allow the snow to safely slough down the mountain. CDOT would like to take the next step and move the Avalanche Program into the "state of the art" and install five Gazex® exploders at the start of slide paths adjacent to US 40. The work is planned to be under construction during the summer of 2014 and to be in use for the 2014/2015 winter season. These Gazex® units will be installed within the "Stanley" slide area along with shelter buildings housing the propane and oxygen tanks as well as seismograph and radio telemetry. The shelter buildings will be connected to the Gazex® via continuous uphill gas line alignments. All necessary non-proprietary materials such as concrete and rebar will be obtained locally.

The State implements avalanche control mitigation in numerous locations and not just the Stanley Slide Area. Per the Decision Memo issued by the USDA Forest Service, if this system proves successful additional systems may be proposed for installation on the National Forest Systems in the other avalanche paths along the US 40 corridor, and potentially other corridors in Colorado. The Utah DOT has implemented this same system with good results. Given the success of the product used by other State agencies, CDOT is requesting that this waiver be implemented state wide for three years and not just for this specific project. This will give the opportunity to implement the successful system with the same benefits elsewhere.

3. Project Cost: The total project cost is estimated at $2,000,000.

4. Waiver Item Cost: The Waiver Item costs for the Gazex® proprietary equipment will be approximately $450,000 as delivered to the project. All other materials that can be procured from U.S. sources have been separated out from this request.

5. Country of Origin of the Product: France

6. Reasons for the Waiver: CDOT would like to request a waiver to use the Fiscal Year Federal funding as anticipated to be awarded to CDOT for installation of avalanche control systems in Colorado for the next three years; 2014, 2015, 2016. CDOT requests and believes a waiver of the Buy America requirements is warranted under provisions of 23 CFR 635.410 (c) in order to install unique avalanche control equipment manufactured solely and completely in the country of France by the French company Technologie Alpine De Securite. CDOT believes the application of Buy America provisions would be consistent with the public interest when applied to this particular product and the intended use along US 40. Allowing the use of this innovative equipment would also be in the public interest due to the safety benefits compared to the current explosives used for avalanche control, including public hazards created by rounds exploding in locations other than intended and unexploded rounds from misfires in recreational alpine areas. CDOT also believes this specific equipment, or any similar, is not produced in the United States in sufficient and reasonably available quantities which are of satisfactory quality. Furthermore, this system was selected in part due to the results of an FHWA sponsored peer review (Scan Tour) that explored the logistics of installing, operating and maintaining the system.

CDOT would like to install five Gazex® Inertia exploders above US 40 along several known slide paths which are currently being controlled by firing artillery shells from a howitzer which lobs shells into the starting zones. CDOT currently operates under a license agreement with the US Forest Service to control avalanches along US 40. However, CDOT and US Forest Service have been looking for other means of controlling snow slides that does not include artillery shells or explosives due to the inherent risks associated with explosive devices. DOT's are being encouraged to identify, install and use more reliable and less time consuming technologies to mitigate for avalanches. In a recent Peer Review, all parties involved recognized the aforementioned benefits of installing and evaluating Gazex© systems. The artillery method of avalanche control, per the Decision Memo from the USDA Forest Service, will be obsolete in the near future due to the fact that howitzers and shells may no longer be available.

The benefit of the Gazex© system is that an "Exploder" is positioned permanently in place in the avalanche starting zone. The "Exploder" is connected to a "Central Gas Shelter" that supplies a propane and oxygen mixture to the "Exploder". The propane/oxygen mixture is then remotely fired from a laptop computer producing a shockwave that acts directly on the snowpack surface, taking the place of using live ammunition. This will contribute to the elimination of firing military weapons, making avalanche control much safer for all, which is in the interest of the public. However, this product or one like it is not available in the United States, thus the CDOT's request for this waiver.

Under a pilot program in 2007, the Utah DOT (UDOT) installed two Gazex® in a slide path along SR-210. The use of the Gazex® in controlling avalanches has proven successful in Utah. In order to develop a similar, "state of the art" non-explosive avalanche control program for Colorado, CDOT would like to fund the cost associated with purchasing five Gazex® devices using federal funding. CDOT will require the use of domestic steel as outlined in CDOT Standard Specifications for all other steel materials incorporated into the project.

7. A Description of the Efforts Made by the State to Locate a Domestically Manufactured Product: CDOT, after consulting with other states through a Peer Exchange (Scan Tour) funded by FHWA in 2013, has sought out domestically-made avalanche control systems through searching the internet and working closely with other agencies in the Western United States responsible for avalanche control such as Mammoth, California, Jackson Hole, Wyoming and Taos, New Mexico that use artillery based avalanche control. Through this effort, one domestic manufacturer was located. The particular system is called the Avalauncher® which launches a two to four pound projectile, using compressed nitrogen, to a distance up to about one mile. This product is domestically manufactured by Avalanche Mitigation Services located in Aspen, Colorado (http://avalanchemitigationservices.com/index.htm). To our knowledge, there is no American-made system that can be used to repeatedly detonate explosive charges in remote avalanche starting zones without firing projectiles. The main problem with the Avalauncher® system is it launches a projectile which is exactly what CDOT, USDA Forest Service, and the US Army want to reduce; namely the practice of firing artillery shells to reduce avalanche risk.

8. An Analysis of Re-design of the Project Using Alternate or Approved Equal Domestic Product: A re-design analysis using a domestically-available system was not done for the purpose of requesting this waiver because such a system made in America does not exist. The only known domestically-produced avalanche control system, Avalauncher® (as explained above in section 7), launches a projectile and therefore is the same type of avalanche control system that CDOT currently uses (artillery), and the whole point of wanting to purchase and install the foreign made product (Gazex®) is because this particular, unique system does not involve launching artillery into the air and handling explosive, military ordinance on a routine basis.